STCL 4 (3)

NOV 1 0 1995

ENGINEERING DATA TRANSMITTAL

1. EDT № 613465

2. To: (Receiving Organization)	3. From: (Originating Organization)	4. Related EDT No.:
Distribution	Characterization Plans, Coordination and Reports	N/A
5. Proj./Prog./Dept./Div.:	**6. Cog. Engr.:**	**7. Purchase Order No.:**
Tank 241-SX-108/Waste Management/CPCR/Technical Basis Characterization	Robert F. Eggers	N/A
8. Originator Remarks: This document is being released into the supporting document system for retrievability purposes.		**9. Equip./Component No.:** N/A
		10. System/Bldg./Facility: N/A
11. Receiver Remarks: For release.		**12. Major Assm. Dwg. No.:** N/A
		13. Permit/Permit Application No.: N/A
		14. Required Response Date: 11/09/95

15. DATA TRANSMITTED

(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	(F) Approval Designator	(G) Reason for Transmittal	(H) Originator Disposition	(I) Receiver Disposition
1	WHC-SD-WM-DP-151	N/A	0	45-Day Safety Screening Results for Tank 241-SX-108, Auger Samples 95-AUG-042, 95-AUG-043 and 95-AUG-044	Q	2	1	1

16. KEY

Approval Designator (F)	Reason for Transmittal (G)	Disposition (H) & (I)
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)	1. Approval 4. Review 2. Release 5. Post-Review 3. Information 6. Dist. (Receipt Acknow. Required)	1. Approved 4. Reviewed no/comment 2. Approved w/comment 5. Reviewed w/comment 3. Disapproved w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)

(G) Reason	(H) Disp.	(J) Name (K) Signature (L) Date (M) MSIN	(J) Name (K) Signature (L) Date (M) MSIN	(G) Reason	(H) Disp.
2	1	Cog.Eng. R.F. Eggers R.F. Eggers			
2	1	Cog. Mgr. J.G. Kristofzski 11/10/95			
2	1	QA W.A. Hendricksen 11/10/95			
		Safety			
		Env.			
2	1	Program Support A.D. Rice for 11/10/95			

18.	19.	20.	21. DOE APPROVAL (if required) Ctrl. No.
A.E. Young Signature of EDT Originator Date 11-9-95	N/A Authorized Representative for Receiving Organization Date	J.G. Kristofzski Cognizant Manager Date 11/10/95	[] Approved [] Approved w/comments [] Disapproved w/comments

BD-7400-172-2 (04/94) GEF097

RELEASE AUTHORIZATION

Document Number:	WHC-SD-WM-DP-151, REV 0
Document Title:	45-Day Safety Screening Results for Tank 241-SX-108, Auger Samples 95-AUG-042, 95-AUG-043 and 95-AUG-044
Release Date:	11/10/95

This document was reviewed following the procedures described in WHC-CM-3-4 and is:

APPROVED FOR PUBLIC RELEASE

WHC Information Release Administration Specialist:

Kara Broz 11/10/95

Kara Broz

SUPPORTING DOCUMENT

1. Total Pages 43

2. Title	3. Number	4. Rev No.
45-Day Safety Screening Results for Tank 241-SX-108, Auger Samples 95-AUG-042, 95-AUG-043 and 95-AUG-044	WHC-SD-WM-DP-151	0

5. Key Words	6. Author
45-Day, Safety Screening, Screening, Results, TAnk 241-SX-108, Tank SX-108, SX-108, SX Farm, Auger Sample, 95-AUG-042, 95-AUG-043, 95-AUG-044	Name: Robert F. Eggers Robert F. Eggers Signature Organization/Charge Code 75310/N4G4C

7. Abstract

N/A

8. RELEASE STAMP

OFFICIAL RELEASE BY WHC
DATE NOV 10 1995
Sta. 4

Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

WHC-SD-WM-DP-151, REV. 0

ANALYTICAL SERVICES

45-DAY SAFETY SCREENING RESULTS FOR TANK 241-SX-108, AUGER SAMPLES 95-AUG-042, 95-AUG-043, AND 95-AUG 044

DATE PRINTED: NOVEMBER 9, 1995

TABLE OF CONTENTS

List of Tables

ATTACHMENTS

This Document consists of pages 1 through 37, plus page 9.1 and 11.1.

LIST OF TERMS

DQO	data quality objective
DSC	differential scanning calorimetry
ICP	inductively coupled plasma
Northwest Laboratory	Pacific Northwest National Laboratory
REDOX	Reduction-Oxidation
RPD	High Relative Percent Difference
SST	single-shell tank
TGA	

FORTY-FIVE-DAY SAFETY SCREENING RESULTS FOR TANK 241-SX-108 AUGER SAMPLES 95-AUG-042, 95-AUG-043, AND 95-AUG-044

1.0 INTRODUCTION AND SUMMARY

Single-Shell Tank (SST) 241-SX-108 contains about 435,321 L (435 m^3) [115,000 gal (15,370 ft^3)] of waste received from the Reduction-Oxidation (REDOX) facility. The waste is classified as REDOX high-level waste. The height of the waste in the tank is about 122 cm (48 in.).

Brevick et al. (1994) predicted that the waste consists of sludge with some drainable liquid. The tank is not classified as a high-heat tank, but is estimated to generate heat at a rate of about 40,000 Btu/hr (2.6 Btu/hr/ft^3).

1.1 SCOPE AND APPLICABLE SAFETY SCREENING DATA QUALITY OBJECTIVE DOCUMENT

This document is the 45-day safety screening report for SX-108. The safety screening DQO applicable at the time this tank was sampled, September, 1995, is WHC-SD-WM-SP-004, Rev. 2, *Tank Safety Screening Data Quality Objective*, (Dukelow et al. 1995). The sampling was carried out in compliance with the following sampling and analysis plan, *Tank 241-SX-108 Auger Sampling and Analysis Plan* (Eggers, 1995), WHC-SD-WM-TSAP-007, Rev. 0.

Three auger samples were attempted in three risers. Sample was produced from only two risers. Sampling information for the three auger events is summarized in Table 1.

Table 1. Sampling Information for Tank 241-SX-108.

Auger number	Riser number	Date sample removed from tank	Date sample arrived at laboratory
95-AUG-042	16	9/15/95	9/18/95
95-AUG-043	7	9/19/95	9/20/95
95-AUG-044	17	9/25/95 No sample	9/26/95

Because sampling the top of the solid waste with augers does not provide a complete profile of all of the solid waste, the safety screen for this tank will not be completed until cores to the bottom of the tank in at least two risers have been obtained and analyzed. The results of additional sampling will be reported in a final tank characterization report for SX-108.

Only safety screening analysis results are presented in this document. Measurements made to meet the requirements at other DQOs addressed in the sampling and analysis plan will be discussed in a revision of this report.

1.2 SAFETY SCREENING MEASUREMENTS MADE

Samples of solid waste material were obtained from two risers. The samples were analyzed in the 222S Laboratory to determine the following:

1. The exothermic reaction potential of solid waste on a dry weight basis
2. The percent water in the waste
3. The total alpha activity in the waste.

In addition an Industrial Health and Safety Vapor Survey of tank gases was carried out.

1.3 SUMMARY OF SAFETY SCREEN RESULTS

The following addresses the adequacy of the sampling plan and summarizes the results of safety screening analyses performed.

- Sample coverage compliance with safety screening DQO

  The gathering of sample material from two risers meets the intent of the current safety screening DQO for lateral separation of samples, but 48-cm (19-in.) auger samples from the top of the waste do not meet the requirement to vertically profile all of the waste. Because the waste is 122 cm (48 in.) deep, additional core samples are required to provide sample material from the bottom 75 cm (30 in.) of waste. Additional core samples will be gathered to meet this requirement.

- Exotherm measurement results

  The dry-basis-corrected exotherms measured using differential scanning calorimetry (DSC) were zero for the two augers that produced samples. The 95% confidence limit high values were also zero. The notification value is 480 J/g.

- Percent moisture results

  The measured weight percent (wt%) moisture values for the two cores ranged from 0.7% to 3.2%. The 95% confidence low values ranged from 0% to 1.2%. Under the current DQO, there is no notification limit for wt% moisture.

- Total alpha radioactivity measurement results

  The alpha radioactivity measurement results ranged from about 1.6 to 5.4 μCi/g. The 95% confidence high value ranged from 2.0 to 7.4 μCi/g. These values are well below the notification limit of 41 μCi/g.

- Results of Industrial Hygiene and Safety Vapor Survey

  A vapor survey or sniff test of the gases in the tank twenty feet inside the riser gave the results shown in Table 2. The results are included with Work Package Number WS-95-00129-0.

  The concentration of flammable vapor in SX-108 - expressed as a percent of the concentration of gases at the lower flammability limit - is zero. The notification level is 25 percent.

Table 2. Results of Industrial Hygiene and Safety Vapor Survey in Tank SX-108.

Vapor Characteristics Measured	Results
Flammable vapor concentration as percent of lower flammability limit	0%
Volume percent oxygen gas	20.9%
Concentration of ammonia gas in parts per million	0.0 PPM
Concentration of total organic vapor in parts per million	0.0 PPM

- Overall results of safety screen testing

  The safety screen information summarized earlier suggests the following:

  The top 48 cm (19 in.) of the solid waste material at the bottom of the tank are safe from a self-propagating chemical reaction (fuel-energy-concentration effect) and a spontaneous nuclear chain reaction or criticality (fissile-isotope-concentration effect).

  The gas in the vapor space above the waste was safe from a self-propagating chemical reaction (flammable-gas-concentration effect) at the time the gas was sniffed.

  These results are for a limited portion of the solid waste in the tank. Therefore, they cannot be extrapolated to cover all of the solid waste in the tank. Additional core samples are required to provide material from the bottom 75 cm (30 in.) of waste in the tank.

2.0 DESCRIPTION OF EXTRUSIONS AND SAMPLES

Three auger-type samples of the top 48 cm (19 in.) of the waste were attempted. Two augers produced useful-sized samples. The third did not produce any sample. The samples were very dry and contained no drainable liquid. The material was seen to be flighty, i.e., did not appear to be cohesive and could readily move around if not confined. Also, the dose rates of the samples were high. The analytical laboratory was concerned that the high dose rate and "flightiness" of the material might cause problems during the sample handling and analysis processes. Table 3 summarizes the sampling results.

Table 3. Single-Shell Tank SX-108 Auger Sample Summary.

Auger no.	Riser no. & drill string dose	Drainable liquid	Segment half	Jar no. & sample description	Recovery amount
95-AUG-042	16 --- Drl strg dose = 250 mR/hr	0	Upper	J-7731; very dry, gray, powdery.	30.8g
			Lower	J-7730; some large chunks	50.5g
			Total recovery		81.3g
95-AUG-043	7 --- Drl strg dose = 1200 mR/hr	0	Upper	J-7737; dry, gray-black, powdery, large chunks	135.0g
			Lower	J-7738; gray fine powder	9.1g
			Total recovery		144.1g
95-AUG-044	17 --- Drl strg dose = 1.5 mR/hr	0	NA		NA
			NA		NA
			Total recovery		0

2.1 DIVISION OF AUGER SAMPLE 95-AUG-042 INTO SUBSAMPLES

The extrusion of 95-AUG-042 was divided into lower-half and upper-half samples. The upper-half sample was homogenized and divided into samples for safety screening analysis, inductively coupled plasma (ICP) analysis, and archiving. The subsample net weights are as follows.

- 95-AUG-042 upper-half sample division weights

  Safety screening and ICP analyses 10.3 g
  Archive sample 20.5 g.

The lower half of Sample 95-AUG-042 was divided into the following three subsamples.

- 95-AUG-042 lower-half sample division weights

Safety screening and ICP analyses	9.8 g
Archive sample	16.5 g
Pretreatment DQO sample to Pacific Northwest Laboratory (PNL)	24.2 g.

2.2 DIVISION OF AUGER SAMPLE 95-AUG-043 INTO SUBSAMPLES

The extrusion of Sample 95-AUG-043 was divided into lower-half and upper-half samples, which were further divided into the following subsamples.

- 95-AUG-043 upper-half sample division weights

Safety screening and ICP analyses	9.5 g
Archive sample	60.6 g
Pretreatment DQO sample to PNL	30.0 g.

- 95-AUG-043 lower-half sample division weights

Safety screening and ICP analyses	4.6 g
Archive sample	2.7 g.

3.0 RESULTS OF SAFETY SCREENING ANALYSES

The following sections describe the results of safety screening analyses performed on Samples 95-AUG-042 and 95-AUG-043.

3.1 RESULTS OF SAFETY SCREENING ANALYSES FOR 95-AUG-042

Table 4 summarizes the results of exotherm, wt% water and total alpha measurements on 95-AUG-042.

Differential Scanning Calorimetry measurements for exothermic reactions were performed according to method LA-514-114, Rev. C, Mod. 0. Thermogravimetric analysis (TGA) measurements for percent water were performed according to method LA-560-112, Rev. B, Mod. 0. Total alpha activity measurements were made according to procedure LA-508-101, Rev. D, Mod. 2.

High Relative Percent Difference (RPD) values of 19.6% (upper half segment) and 27.5% (lower half segment) for % water by TGA are attributed to the low average values of water, 3.2% and 3.1 % respectively, for the upper and lower halves.

Percent water values will be redetermined using the gravimetric analysis method to check the results produced by TGA methods. The results of this work will be reported in the final report for SX-108.

3.2 RESULTS OF SAFETY SCREENING ANALYSES FOR 95-AUG-043

Table 5 summarizes the results of exotherm, wt% water and total alpha measurements on 95-AUG-043.

Differential Scanning Calorimetry was performed according to method LA-514-113, Rev. C, Mod. 0. Thermogravimetric Analysis measurements for percent water were performed according to method LA-514-114, Rev. C, Mod. 0. Total alpha activity measurements were made according to procedure LA-508-101, Rev. D, Mod. 2.

High RPD values of 93% (upper half segment) and 51% (lower half segment) for % water by TGA are attributed to the low average values of water, 1.1% and 0.7% respectively, for the upper and lower halves of the segment.

Percent water values determined by TGA will be redetermined by the gravimetric method. The results of this work will be reported in the final report for SX-108.

3.3 ATTACHED DATA

DSC and TGA scans are attached, because these tests are interpretive in nature. Safety screening report data summary tables printed directly from Labcore are attached as well.

3.4 THERMOGRAVIMETRIC DATA ANALYSIS

Thermogravimetric data will be further reviewed to resolve questions concerning possible instrument noise (as seen on traces on pages 27-30 and 35-37) and the difference in appearance of the traces between Sample S95002567 (pg. 34) and the duplicate Sample S95002567 (pg. 35). Results of the reveiw will be reported in the final report.

Table 4. 45-Day Safety Screening Results for 95-AUG-042.

Auger No.: 95-AUG-042											
Segment half	Measurement	Units	Notif. limit & accept. range	Sample meas. result	Dupl. meas. result	Avg. value	Std. dev. of avg.	95% Conf. mult.	95% Conf. limit Low/High	95% Conf. limit value	Pass notif. limit test?
Upper	Exotherm-dry calculated	J/g	< 480	0.00	0.00	0.00	0.00	6.314	High	0.00	Pass
Upper	% water, TGA by Mettler	%	None	2.86	3.48	3.17	0.31	6.314	Low	1.21	NA
Upper	Total alpha radioactivity	uCi/g	< 41	1.96	1.95	1.955	0.01	6.314	High	1.99	Pass
Lower	Exotherm-dry calculated	J/g	< 480	0.00	0.00	0.00	0.00	6.314	High	0.00	Pass
Lower	% water, TGA by Mettler	%	None	2.70	3.56	3.13	0.43	6.314	Low	0.41	NA
Lower	Total alpha radioactivity	uCi/g	< 41	1.74	1.52	1.63	0.11	6.314	High	2.32	Pass

TGA thermo-gravimetric analysis

Table 5. 45-Day Safety Screening Results for 95-AUG-043.

Auger No.: 95-AUG-043											
Segment half	Measurement	Units	Notif. limit & accept. range	Sample meas. result	Dupl. meas. result	Avg. value	Std. dev. of avg.	95% Conf. mult.	95% Conf. Limit Low/High	95% Conf. limit value	Pass notif. limit test?
Upper	Exotherm-dry calculated	J/g	< 480	0.00	0.00	0.00	0.00	6.314	High	0.	Pass
Upper	% water, TGA by Mettler	%	None	0.591	1.62	1.11	0.52	6.314	Low	0.0	NA
Upper	Total alpha radioactivity	uCi/g	< 41	4.07	4.32	4.195	0.125	6.314	High	4.98	Pass
Lower	Exotherm-dry calculated	J/g	< 480	0.00	0.00	0.00	0.00	6.314	High	0.00	Pass
Lower	% water, TGA by Mettler	%	None	0.535	0.897	0.72	0.18	6.314	Low	0.0	NA
Lower	Total alpha radioactivity	uCi/g	< 41	5.08	5.70	5.39	0.31	6.314	High	7.35	Pass

TGA thermo-gravimetric analysis

4.0 REFERENCES

Brevick, C. H., L.A. Gaddis, W. W. Pickett, 1994, *Historical Tank Content Estimate for the Southwest Quadrant of the Hanford 200 West Area*, WHC-SD-WM-ER-352, ICF Kaiser Hanford Company, Richland, Washington.

Eggers, 1995, *Tank 241-SX-108 Auger Sampling and Analysis Plan*, WHC-SD-WM-TSAP-007, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

Dukelow, G. T., J. W. Hunt, H. Babad, and J. E. Meacham, 1995, *Tank Safety Screening Data Quality Objective*, WHC-SD-WM-SP-004, Rev. 2, Westinghouse Hanford Company, Richland, Washington.

SAMPLE DATA SUMMARY

INTERIM

SX-108 AUGER SAMPLES
SX-108

CORE NUMBER: 95-AUG-042,95-AUG-043,95-AUG-044
SEGMENT #: 95-AUG-042

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T002480			% Water by TGA using Mettler	%	None	None	100.9	n/a	2.860	3.480	3.170	19.6	n/a	n/a	n/a
S95T002480			DSC Exotherm on Perkin Elmer	Joules/g	-1.0e+01	480.0	99.61	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T002480			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+01	480.0	n/a	n/a	0.00e+00	n/a	n/a	n/a	n/a	n/a	n/a
S95T002481		F	Alpha of Digested Solid	uCi/g	-1.0e+01	41.00	108.9	<1.21e-01	1.960	1.950	1.955	0.51	106.9	2.78e-01	2.26E+01

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T002489			% Water by TGA using Mettler	%	None	None	100.9	n/a	2.700	3.560	3.130	27.5	n/a	n/a	n/a
S95T002489			DSC Exotherm on Perkin Elmer	Joules/g	-1.0e+01	480.0	99.61	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T002489			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+01	480.0	n/a	n/a	0.00e+00	n/a	n/a	n/a	n/a	n/a	n/a
S95T002500		F	Alpha of Digested Solid	uCi/g	-1.0e+01	41.00	108.9	<1.21e-01	1.740	1.520	1.630	13.5	n/a	2.54e-01	2.23E+01

=> Limit violated
=> Selected Limit

INTERIM

SX-108 AUGER SAMPLES
SX-108

CORE NUMBER: 95-AUG-042,95-AUG-043,95-AUG-044
SEGMENT #: 95-AUG-043

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T002567			% Water by TGA on Perkin Elmer	%	None	None	100.9	n/a	5.91e-01	1.620	1.106	93.1	n/a	n/a	n/a
S95T002567			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+01	480.0	n/a	n/a	0.00e+00	n/a	n/a	n/a	n/a	n/a	n/a
S95T002567			DSC Exotherm using Mettler	Joules/g	-1.0e+01	480.0	98.77	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T002572		F	Alpha of Digested Solid	uCi/g	-1.0e+01	41.00	97.40	<2.97e-01	4.070	4.320	4.195	5.96	98.66	5.14e-01	1.96E+01

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T002577			% Water by TGA on Perkin Elmer	%	None	None	100.9	n/a	5.35e-01	8.97e-01	7.16e-01	50.6	n/a	n/a	n/a
S95T002577			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+01	480.0	n/a	n/a	0.00e+00	n/a	n/a	n/a	n/a	n/a	n/a
S95T002577			DSC Exotherm using Mettler	Joules/g	-1.0e+01	480.0	98.77	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T002578		F	Alpha of Digested Solid	uCi/g	-1.0e+01	41.00	97.40	<2.97e-01	5.080	5.700	5.390	11.5	94.87	5.68e-01	1.86E+01

=> Limit violated
=> Selected Limit

INORGANIC ANALYSES

LABCORE Data Entry Template for Worklist# 2537

Analyst: SMF **Instrument:** DSC0 3 ~~Perkin Elmer~~ **Book #** 12N14A

Method: LA-514-114 Rev/Mod C-0

Worklist Comment: Please run SX-108 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-03	SOLID	28.45	28.34	N/A	Joules/g
95000136	SX-108	2	SAMPLE	S95T002480	0		DSC-03	SOLID	N/A	Ø		Joules/g
95000136	SX-108	3	DUP	S95T002480	0		DSC-03	SOLID	Ø	Ø	N/A	Joules/g
95000136	SX-108	4	SAMPLE	S95T002489	0		DSC-03	SOLID	N/A	Ø		Joules/g
95000136	SX-108	5	DUP	S95T002489	0		DSC-03	SOLID	Ø	Ø	N/A	Joules/g

Final page for worklist # 2537

See Next Sheet.
Analyst Signature **Date**

Verified by Blandina Valenzuela 10-18-95

[signature] 10/17/95.
Analyst Signature **Date**

Anq. 042

S95T002480 had no water endotherm peak it had a small endotherm at 298.8°C with a delta H of 96.6 J/g.

Data Entry Comments: S95T002489 had no water endotherm peak, it had a small endotherm at 295.5°C with a delta H of 91.8 J/g.

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 2537

Analyst: SMF **Instrument:** DSC0 **Book #** IZN419

Method: LA-514-~~113~~ 114 Rev/Mod C-D
SmFulton 10-15-95

Worklist Comment: Please run SX-108 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID			N/A	Joules/g
95000136	SX-108	2	SAMPLE	S95T002480	0		DSC-01	SOLID	N/A			Joules/g
95000136	SX-108	3	DUP	S95T002480	0		DSC-01	SOLID			N/A	Joules/g
95000136	SX-108	4	SAMPLE	S95T002489	0		DSC-01	SOLID	N/A			Joules/g
95000136	SX-108	5	DUP	S95T002489	0		DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 2537

Susie M. Fulton 10-13-95
1530
Analyst Signature **Date**

Analyst Signature **Date**

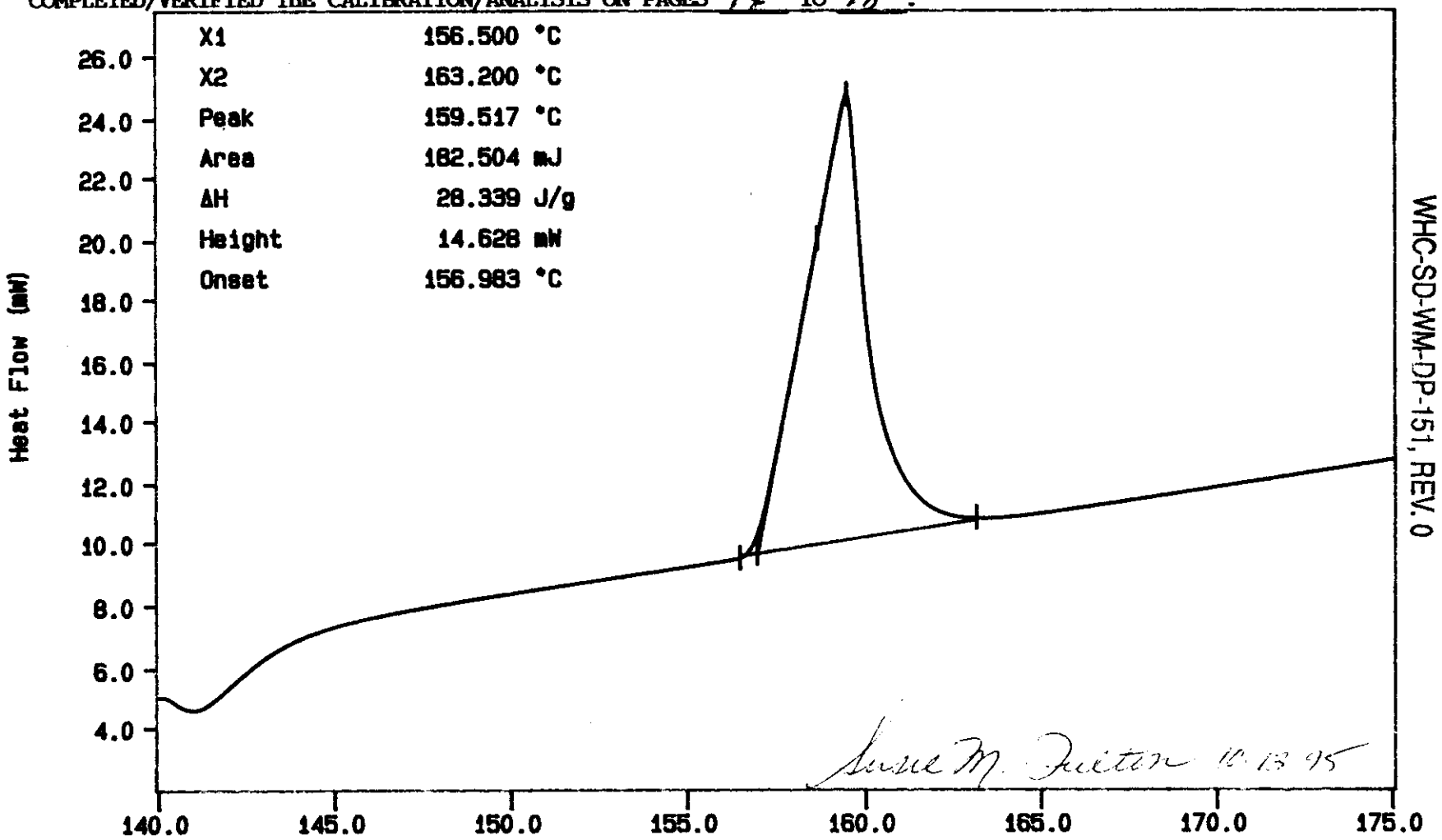
Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

BEST AVAILABLE COPY

Curve 1: DSC
File info: IND101302 Fri Oct 13 07:53:48 1995
Sample Weight: 6.440 mg
Indium at 10C/min

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 14 TO 18.



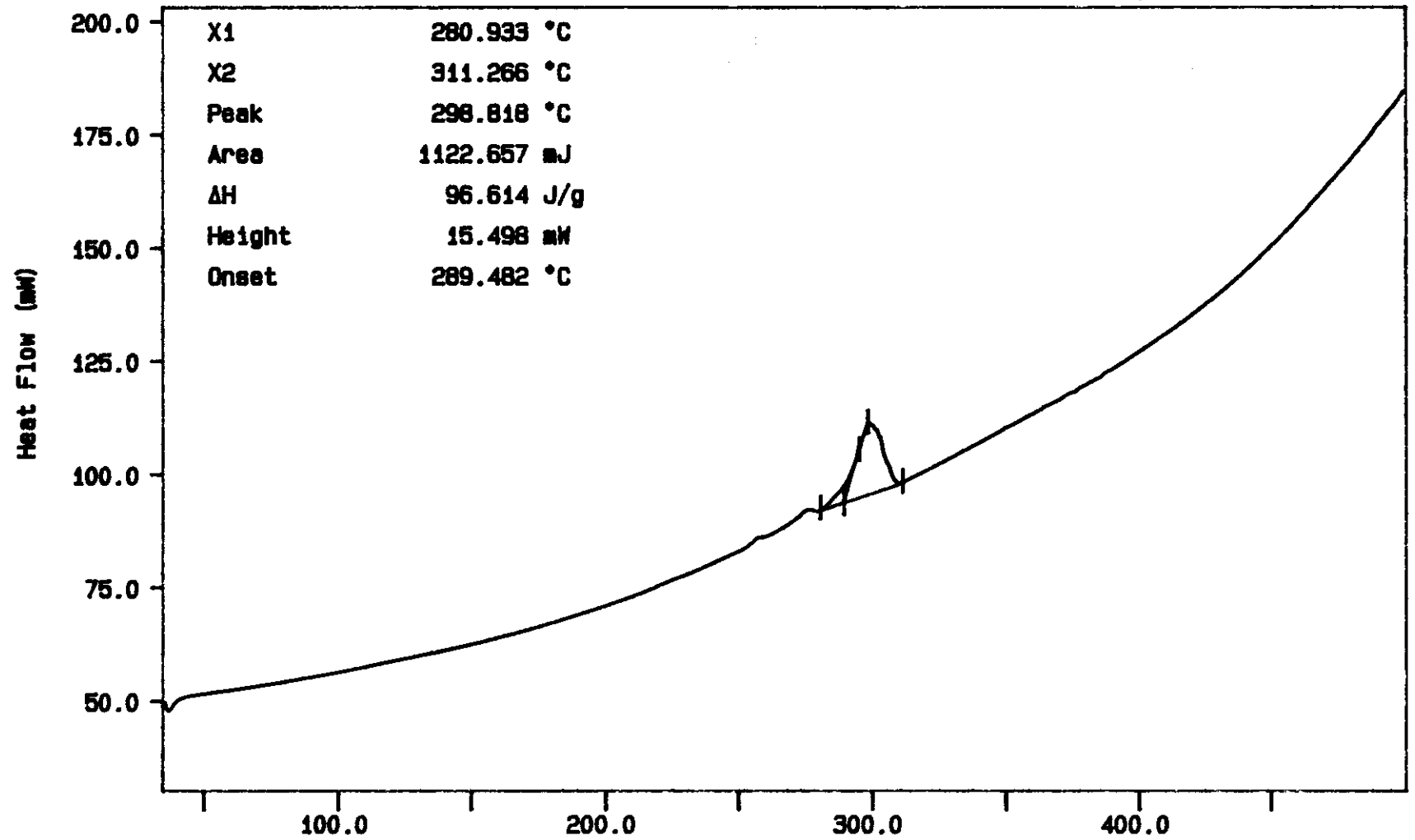
N2 exotherm down
Temperature (°C)
TEMP1: 140.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 175.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Fri Oct 13 07:54:41 1995

WHC-SD-WM-DP-151, REV.0

Curve 1: DSC
File info: SAM101305 Fri Oct 13 12:29:31 1995
Sample Weight: 11.620 mg
S95T005480, at 10C/min

BEST AVAILABLE COPY



exotherm down, N2 purge gas

TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

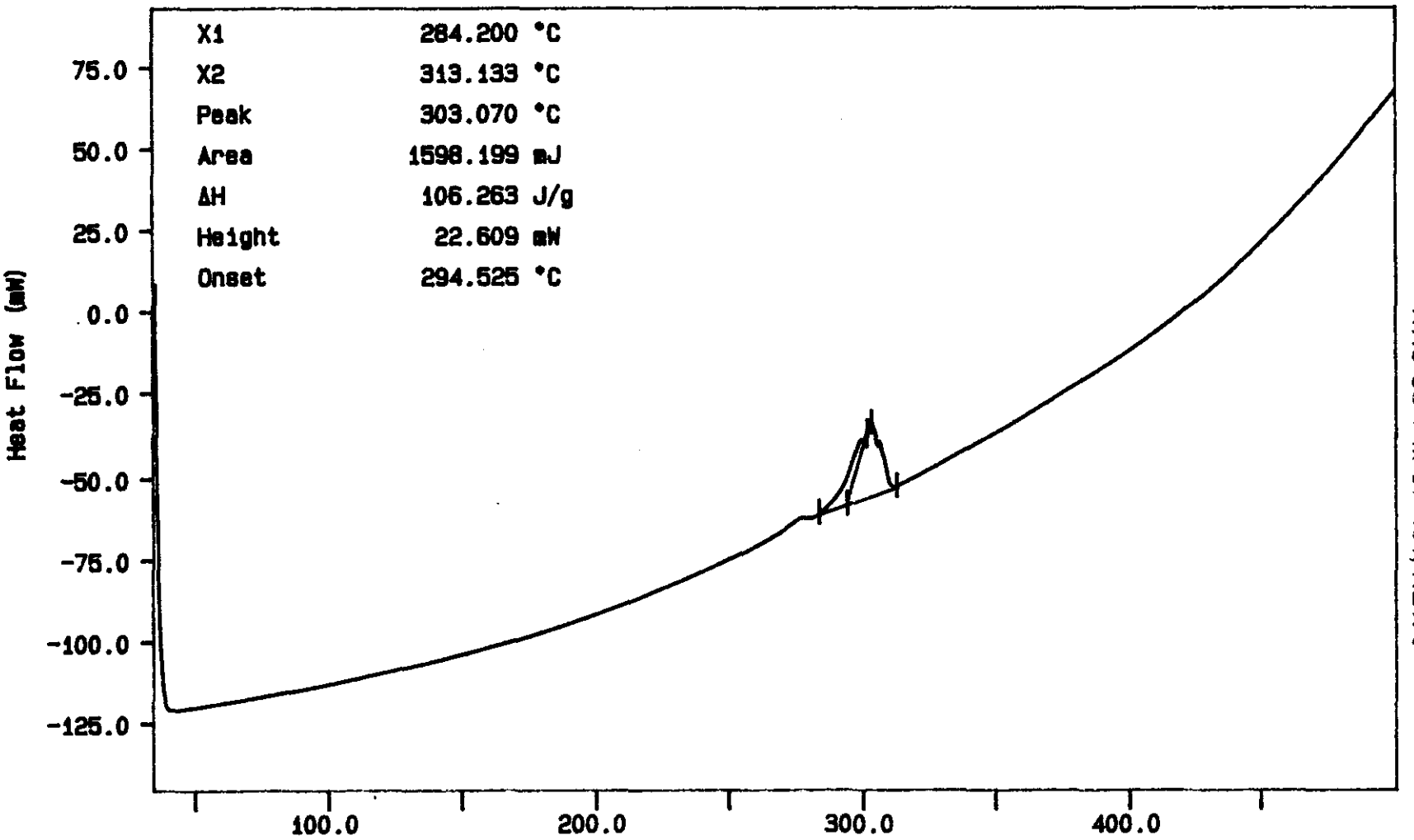
SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Fri Oct 13 12:47:46 1995

WHC-SD-WM-DP-151, REV. 0

15

Curve 1: DSC
File info: SAM101306 Fri Oct 13 13:41:11 1995
Sample Weight: 15.040 mg
S95T005480 DUP, at 10C/min

BEST AVAILABLE COPY



16

WHC-SD-WM-DP-151, REV. 0

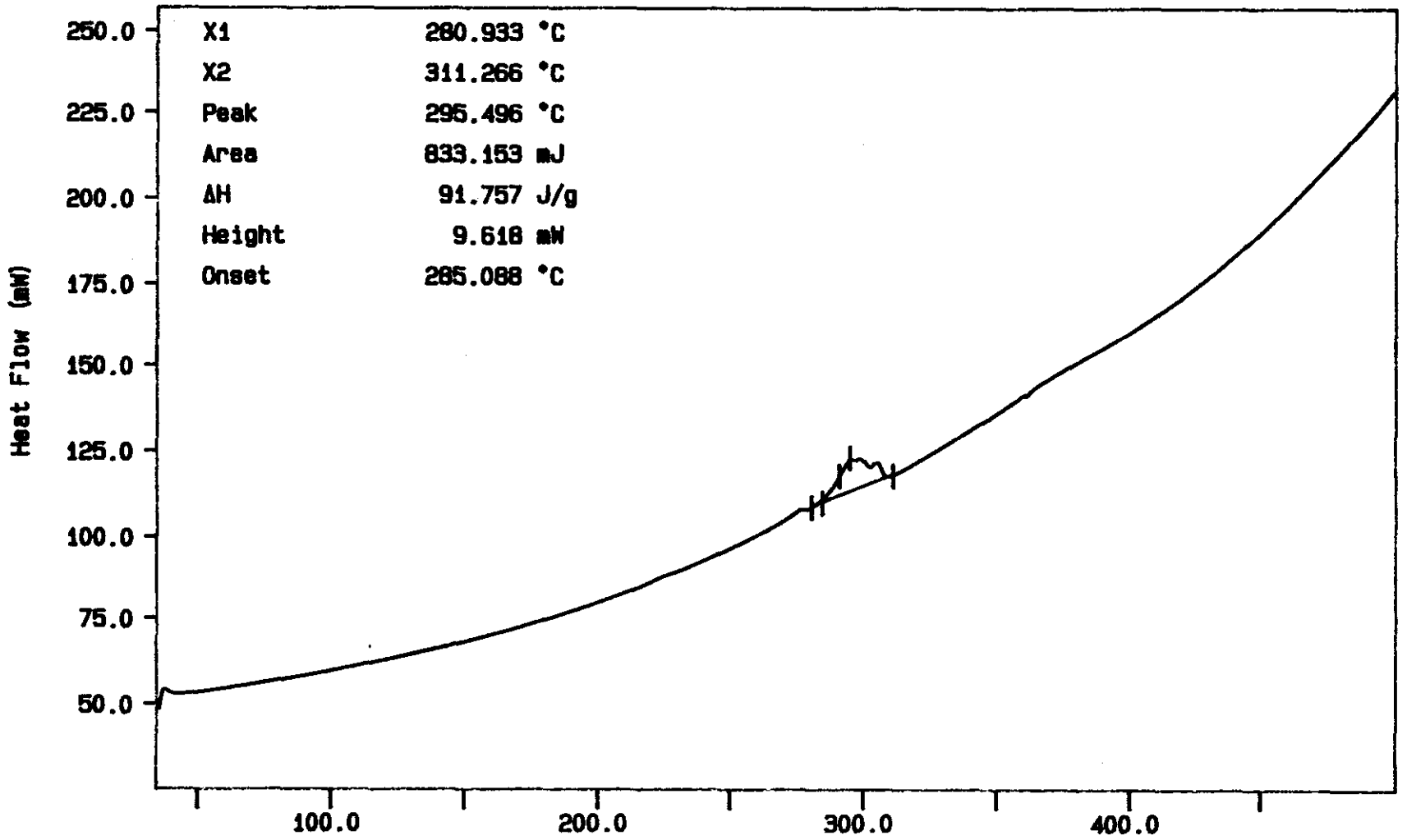
exotherm down, N2 purge gas

TEMP1: 25.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Fri Oct 13 14:10:33 1995

Curve 1: DSC
File info: SAM101303 Fri Oct 13 10:04:34 1995
Sample Weight: 9.080 mg
S95T005489, at 10C/min

BEST AVAILABLE COPY



exotherm down, N2 purge gas

TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 400.0 C

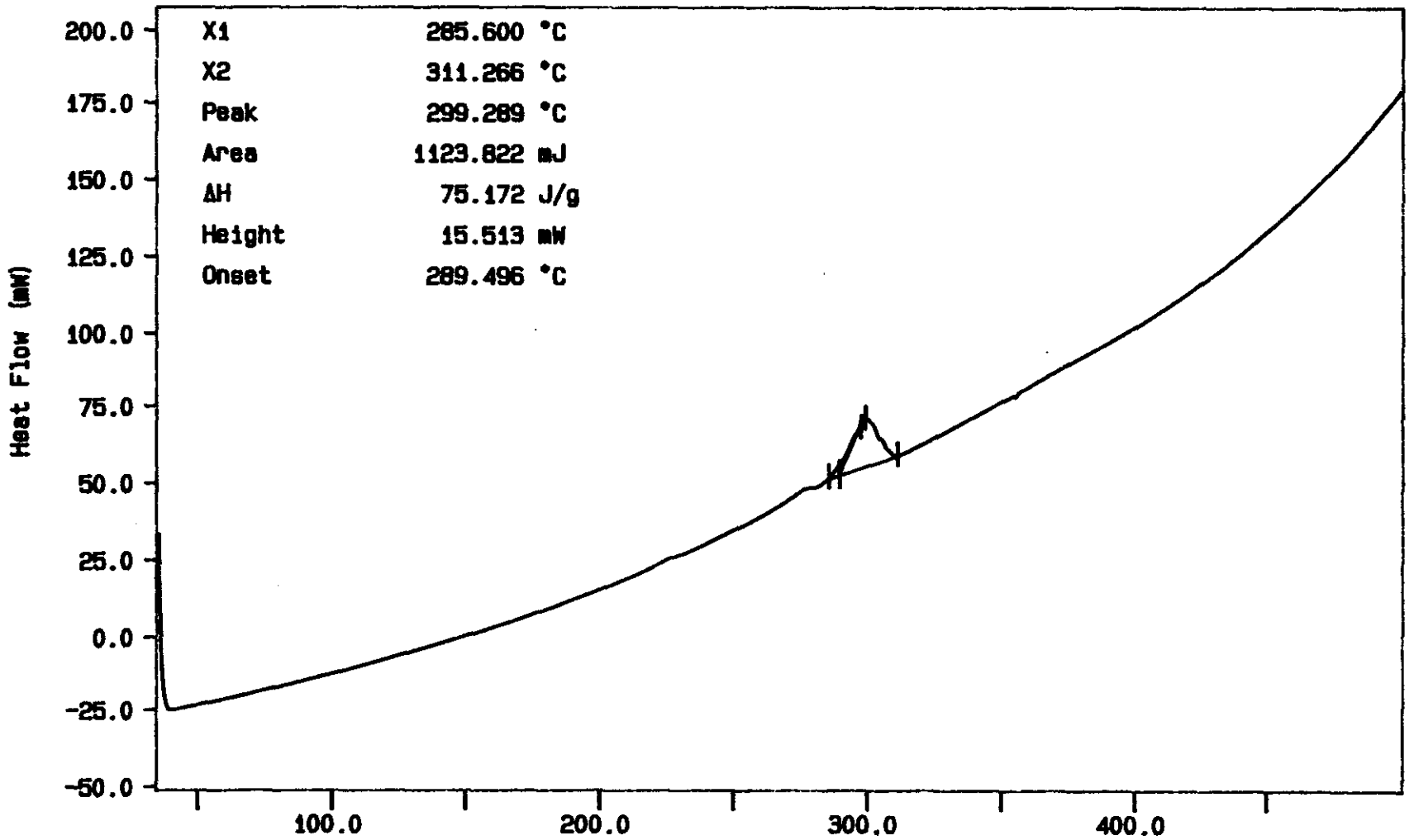
SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Fri Oct 13 10:26:06 1995

WHC-SD-WM-DP-151, REV.0

17

Curve 1: DSC
File info: SAM101304 Fri Oct 13 11:21:52 1995
Sample Weight: 14.950 mg
S95T005489 DUP, at 10C/min

BEST AVAILABLE COPY



TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Fri Oct 13 11:33:35 1995

LABCORE Data Entry Template for Worklist# 2622

Analyst: SMF **Instrument:** DSC0 1 Mettler **Book #** 12N14/7

Method: LA-514-113 Rev/Mod C-D

Worklist Comment: Please run SX-108 DSCs under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-01	SOLID	28.45	28.1	N/A	Joules/g
95000136	SX-108	2 SAMPLE	S95T002567	0		DSC-01	SOLID	N/A	Ø		Joules/g
95000136	SX-108	3 DUP	S95T002567	0		DSC-01	SOLID	Ø	Ø	N/A	Joules/g
95000136	SX-108	4 SAMPLE	S95T002577	0		DSC-01	SOLID	N/A	Ø		Joules/g
95000136	SX-108	5 DUP	S95T002577	0		DSC-01	SOLID	Ø	Ø	N/A	Joules/g

Final page for worklist # 2622

Susie M. Fulton 10-15-95
Analyst Signature **Date** 1545

Verified by Blandina Valenzuela 10-20-95

[signature] 10/18/95
Analyst Signature **Date**

Aug-043

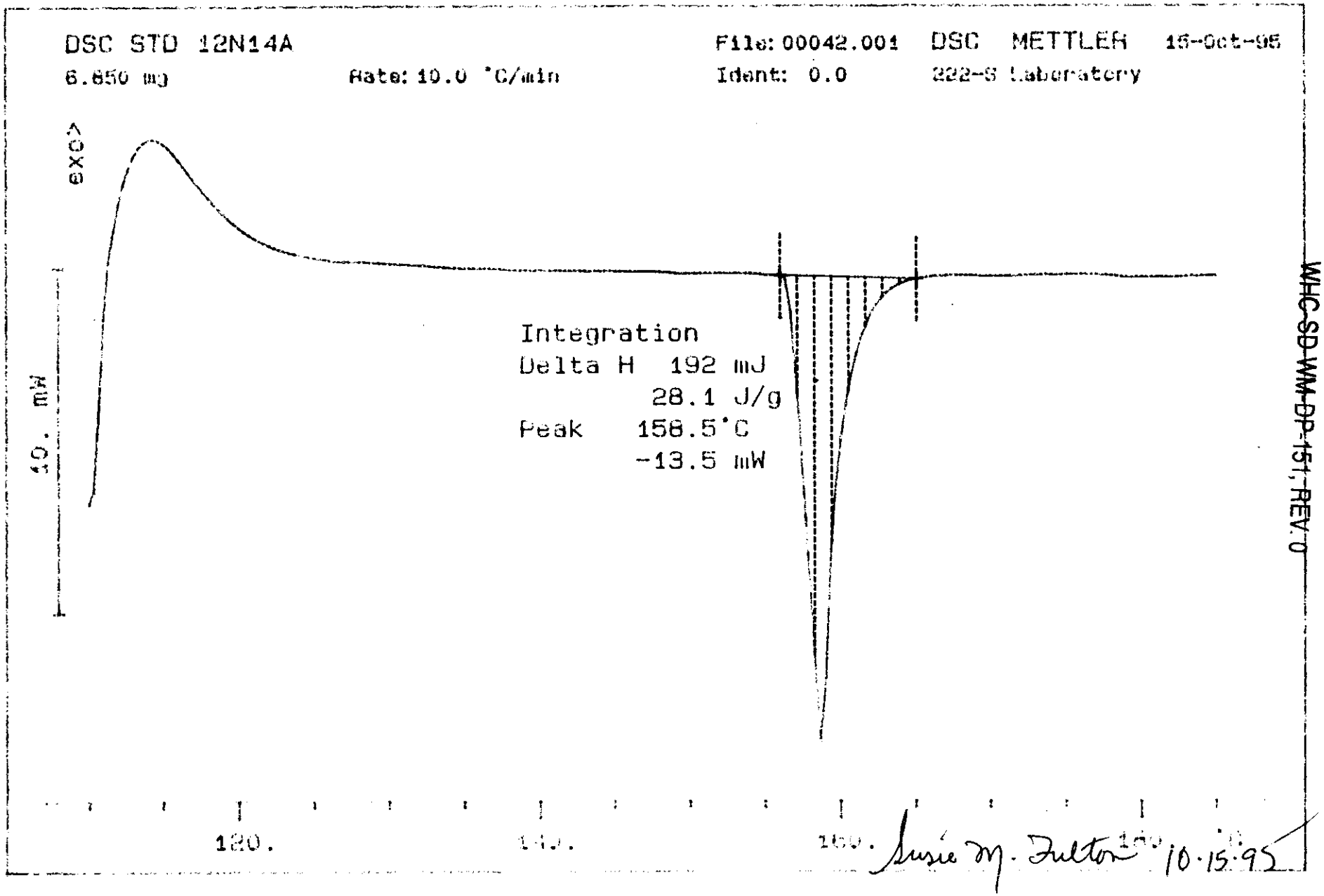
S95T002567 produced an endotherm at ~~117~~ 10-17-95 BDV 295.7°C with a delta H of 117.1 J/g, another endotherm began at approximately 420°C ~~with~~ 10-17-95 BDV however it did not finish when the run ended at 500°C

Data Entry Comments: S95T002577 produced an endotherm at 316.9°C with a delta H of 71.9 J/g, another endotherm began about 420°C but was not completed by ~~the~~ 500°C 10-17-95 BDV

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

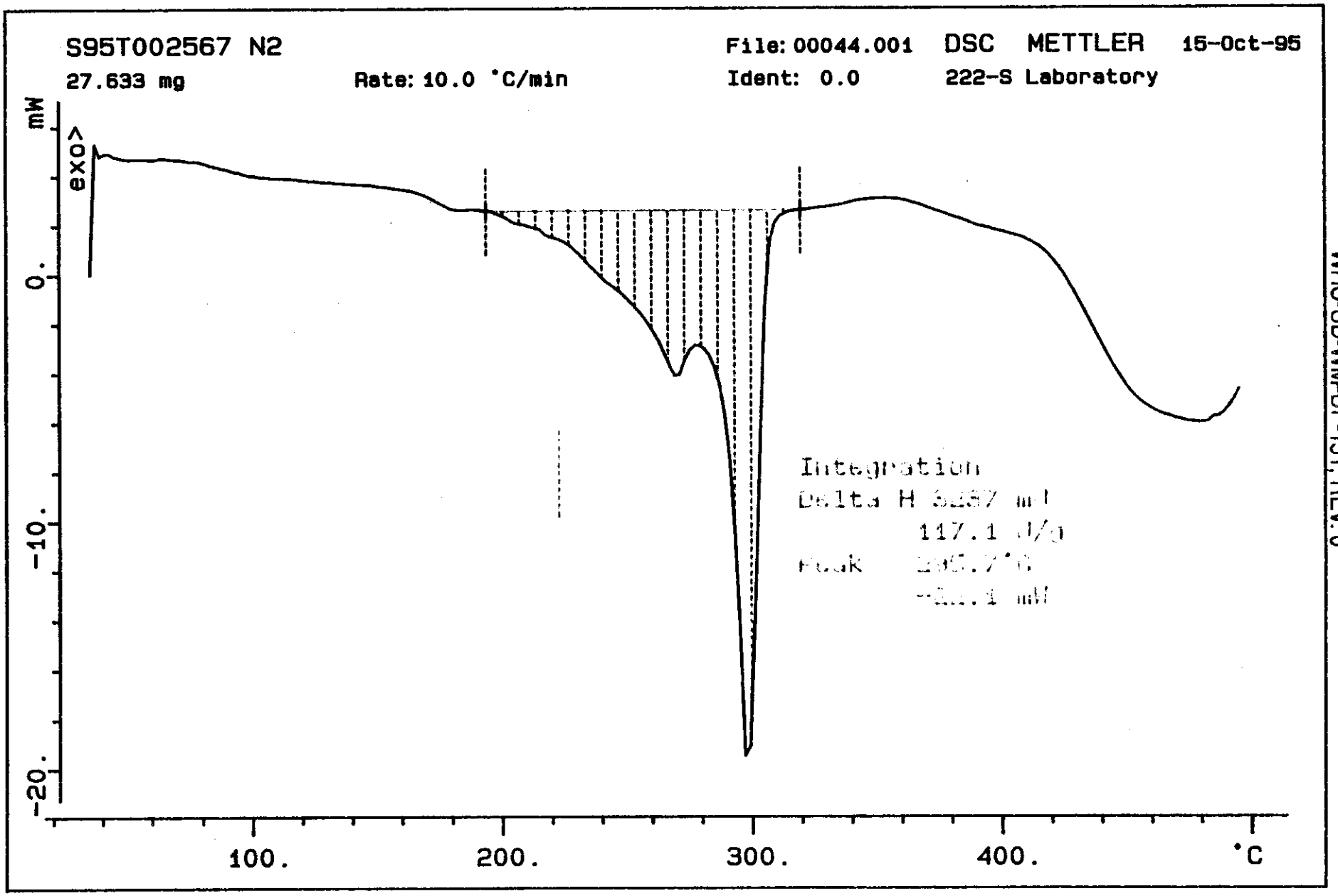
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 20 TO 24.

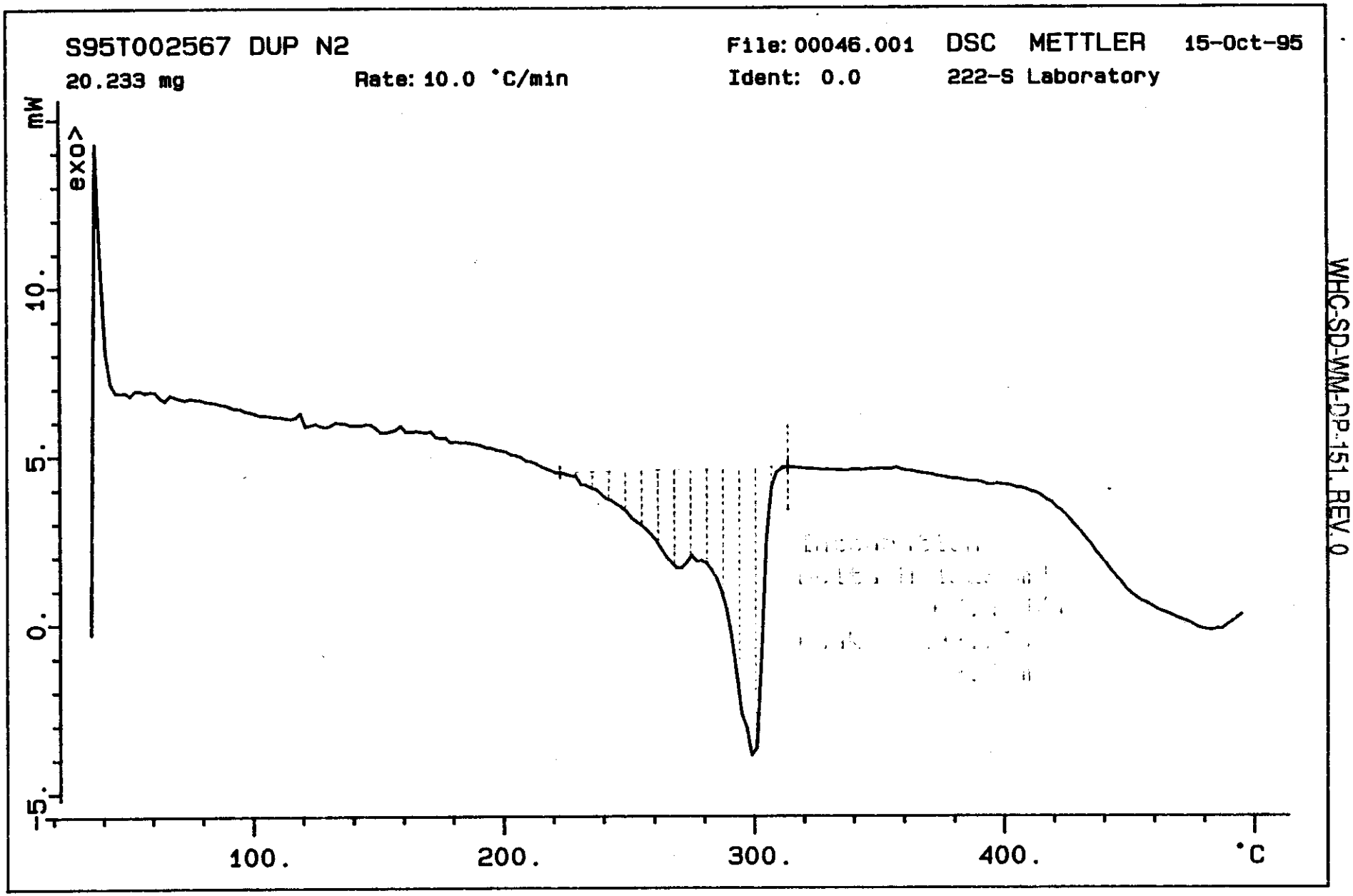
BEST AVAILABLE COPY

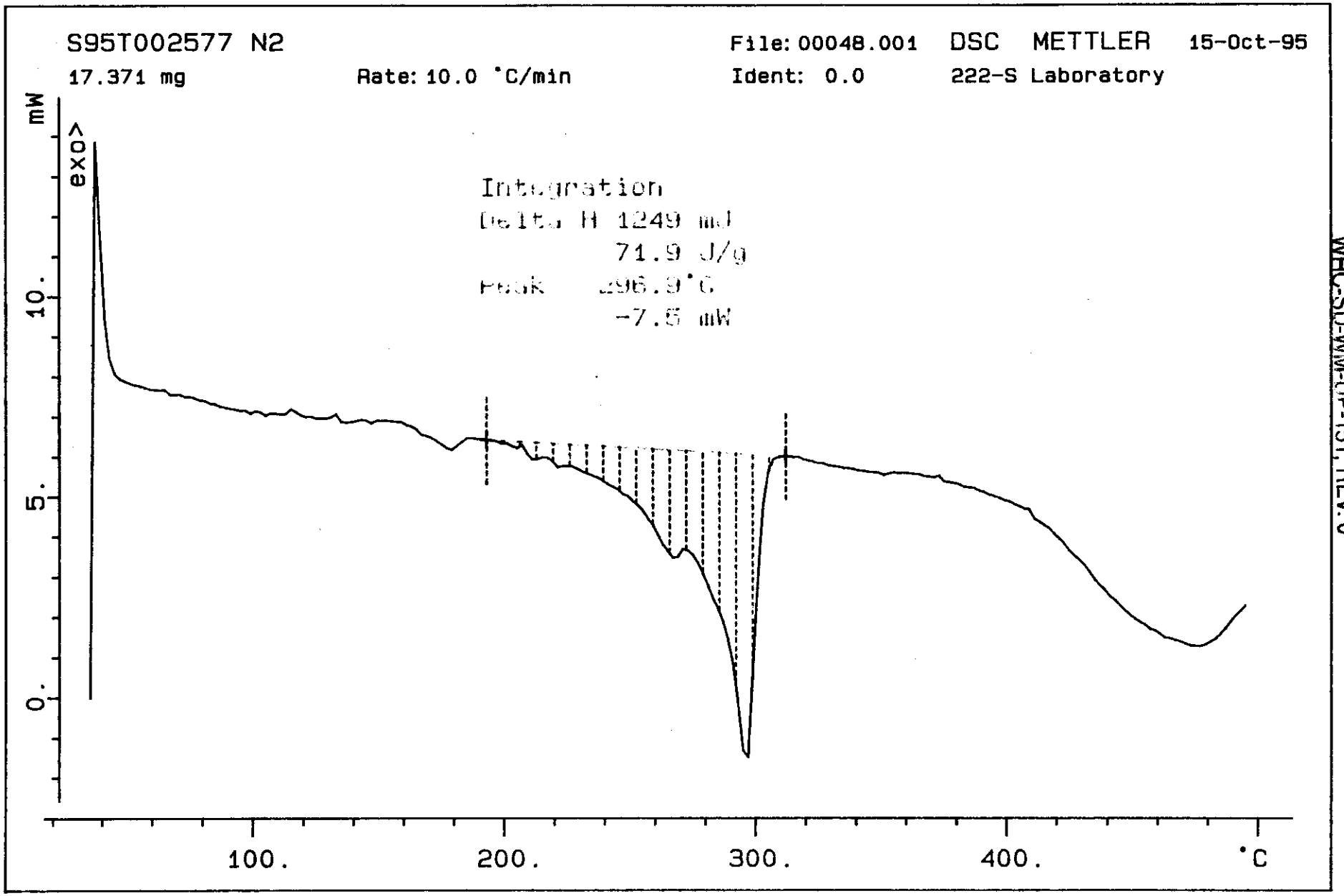


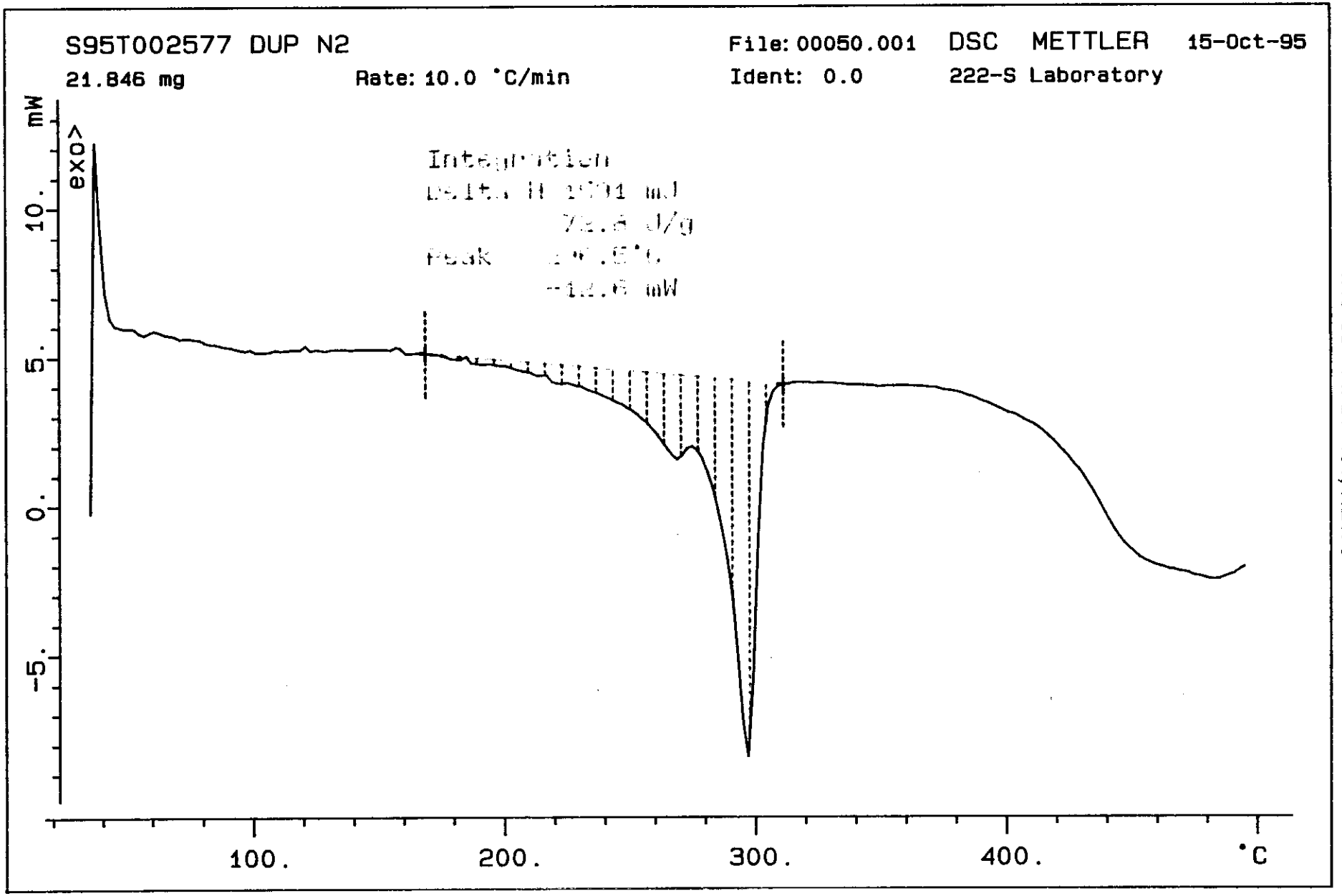
Susie M. Fulton 10.15.95

WHC-SD-WM-DP-151, REV. 0









LABCORE Data Entry Template for Worklist# 2545

Analyst: EDM **Instrument:** TGA0 1 **Book #** 6SN8-A

Method: LA-560-112 Rev/Mod B-0 WHC-SD-WM-DP-151, REV. 0

Worklist Comment: Please run SX-108 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.74	60.29	N/A	%
95000136	SX-108	2	SAMPLE	S95T002480	0		TGA-01	SOLID	N/A	2.86		%
95000136	SX-108	3	DUP	S95T002480	0		TGA-01	SOLID	2.86	3.48	N/A	%
95000136	SX-108	4	SAMPLE	S95T002489	0		TGA-01	SOLID	N/A	2.70		%
95000136	SX-108	5	DUP	S95T002489	0		TGA-01	SOLID	2.70	3.56	N/A	%

Final page for worklist # 2545

K D Meyer 10/17/95
Analyst Signature **Date**

R H Stack 10/18/95
Analyst Signature **Date**

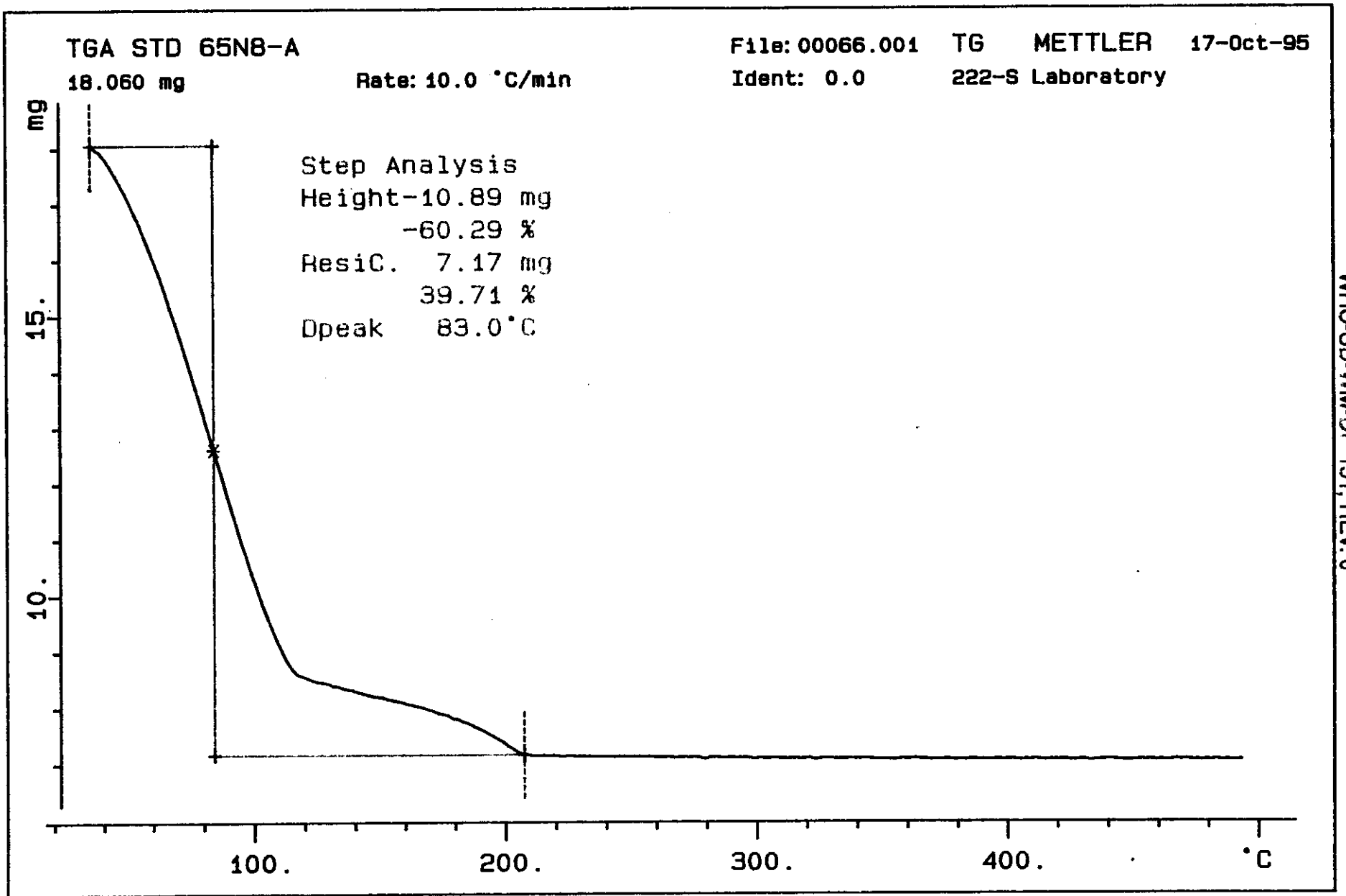
Verified by Blandina Valenzuela 10-20-95

A46-042

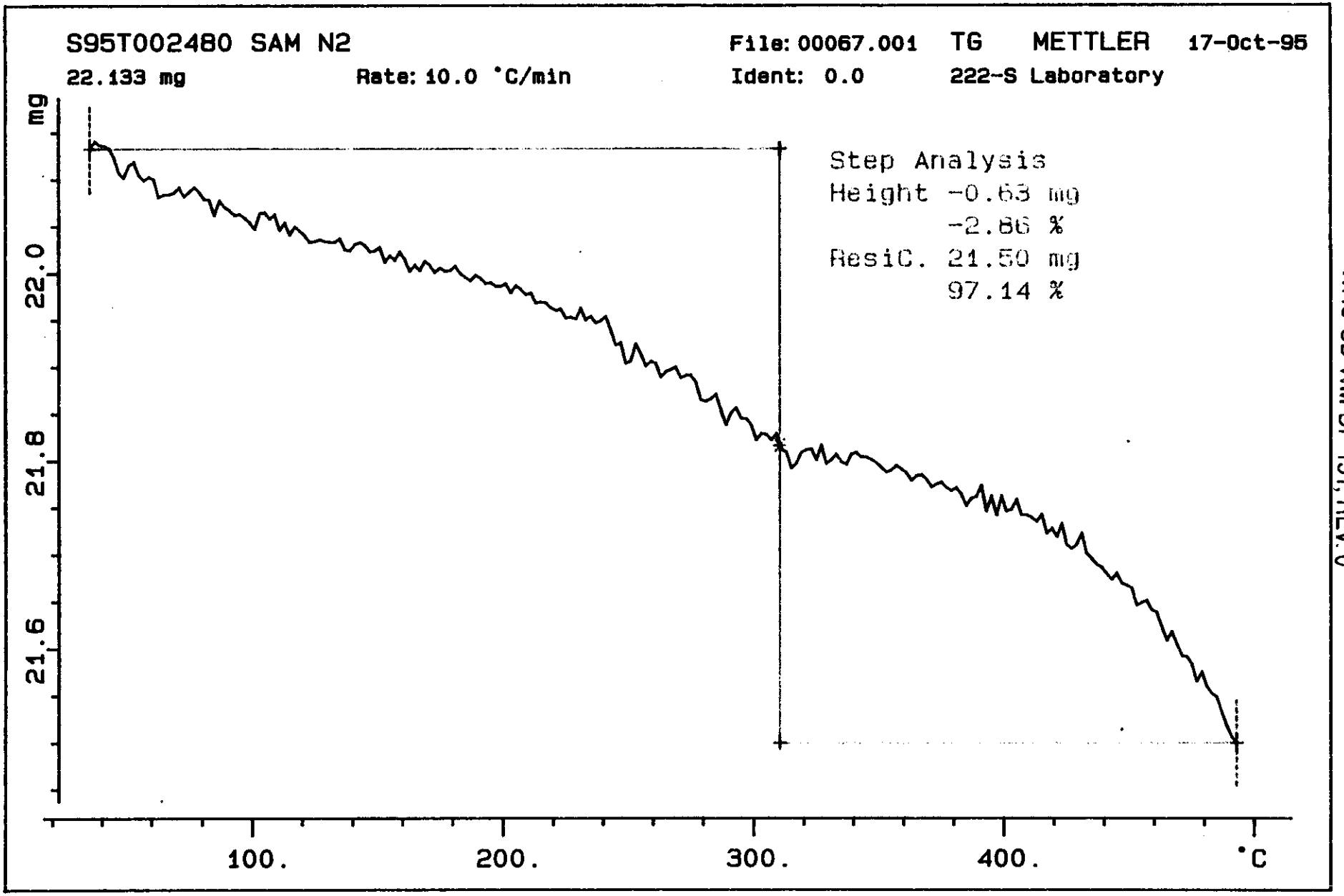
Data Entry Comments: The weight loss given for the two samples is the weight loss from 35-500°C so essentially around 100°C there was very minimal weight loss.

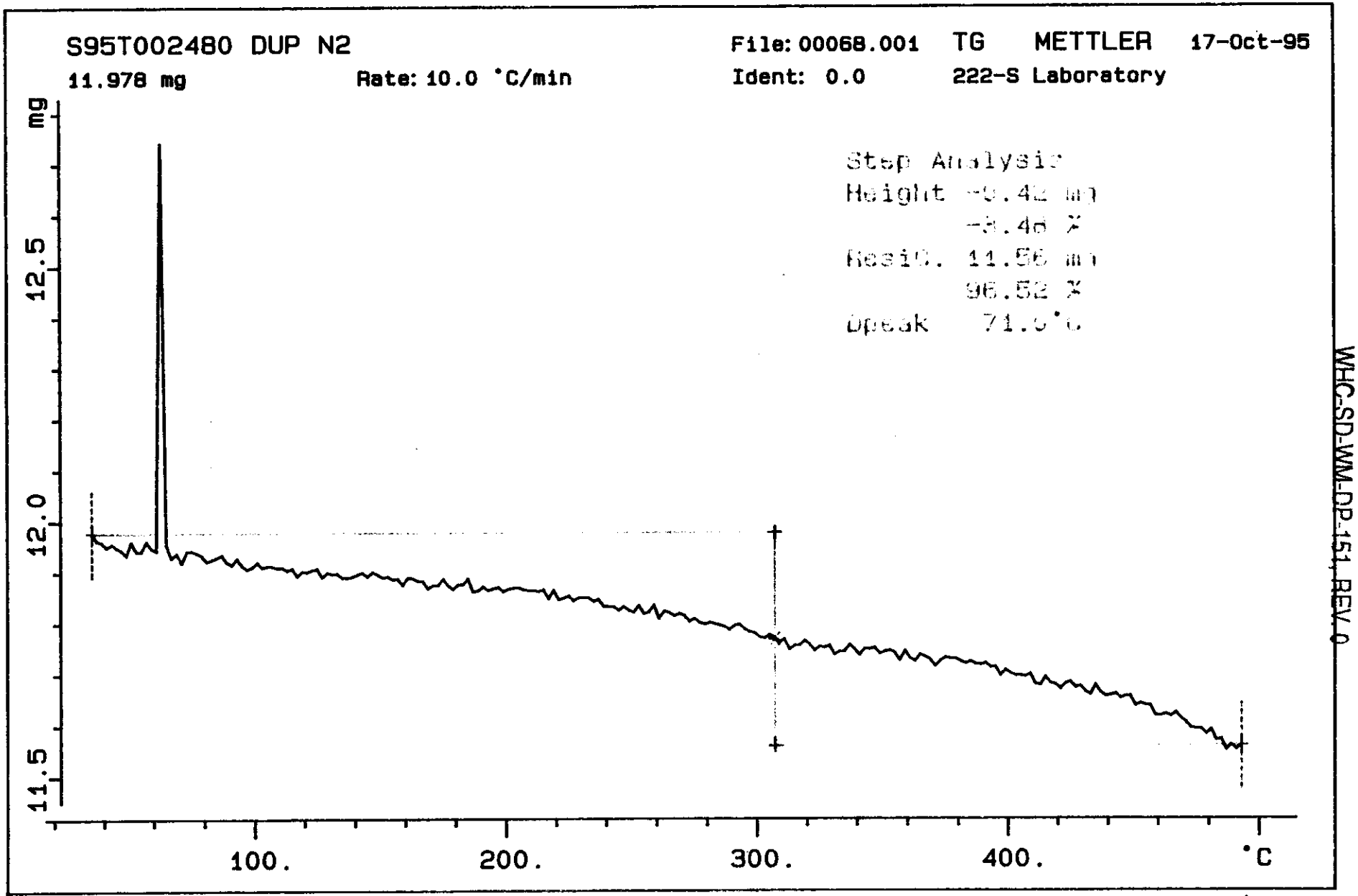
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 26 TO 30.



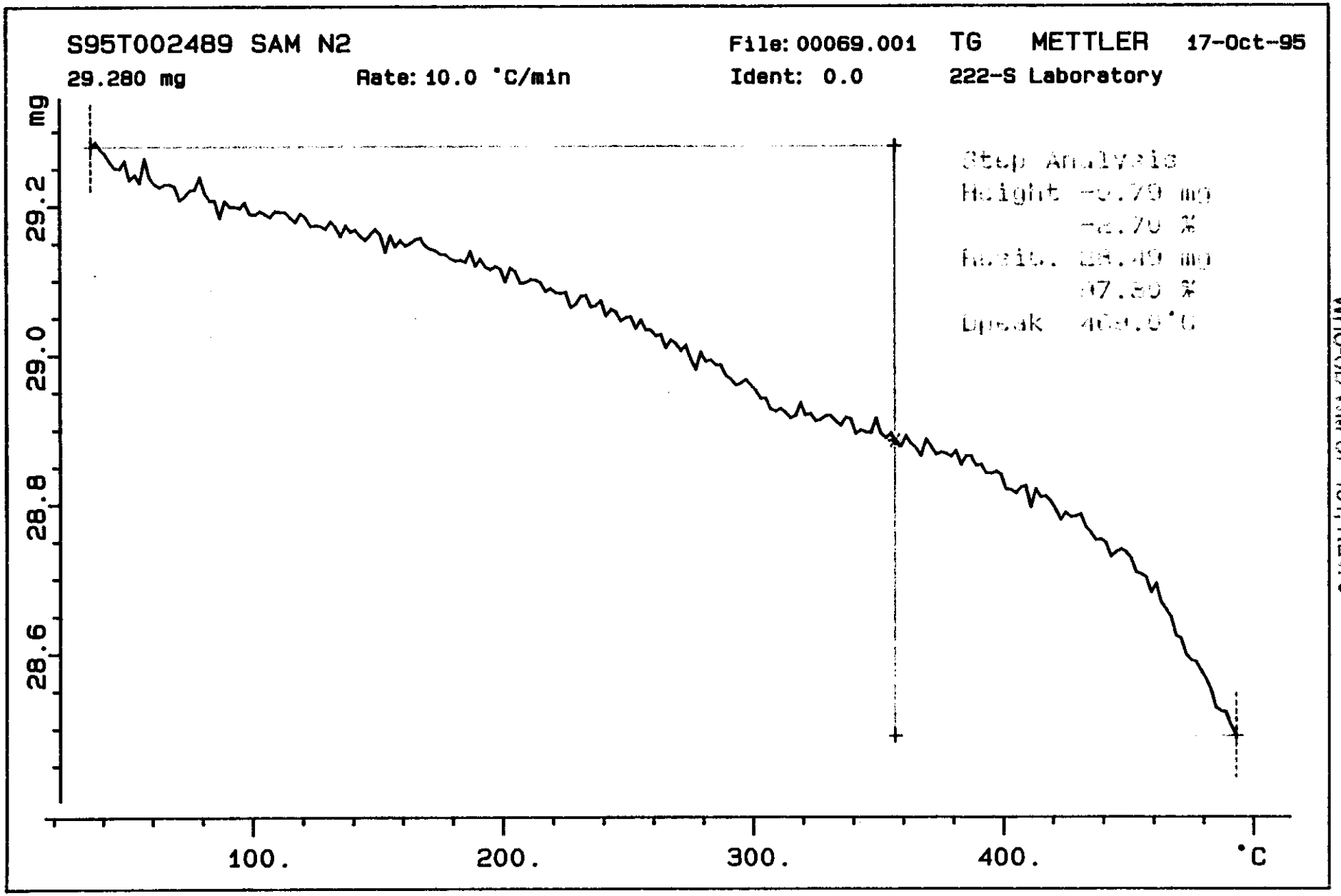
10/17/95

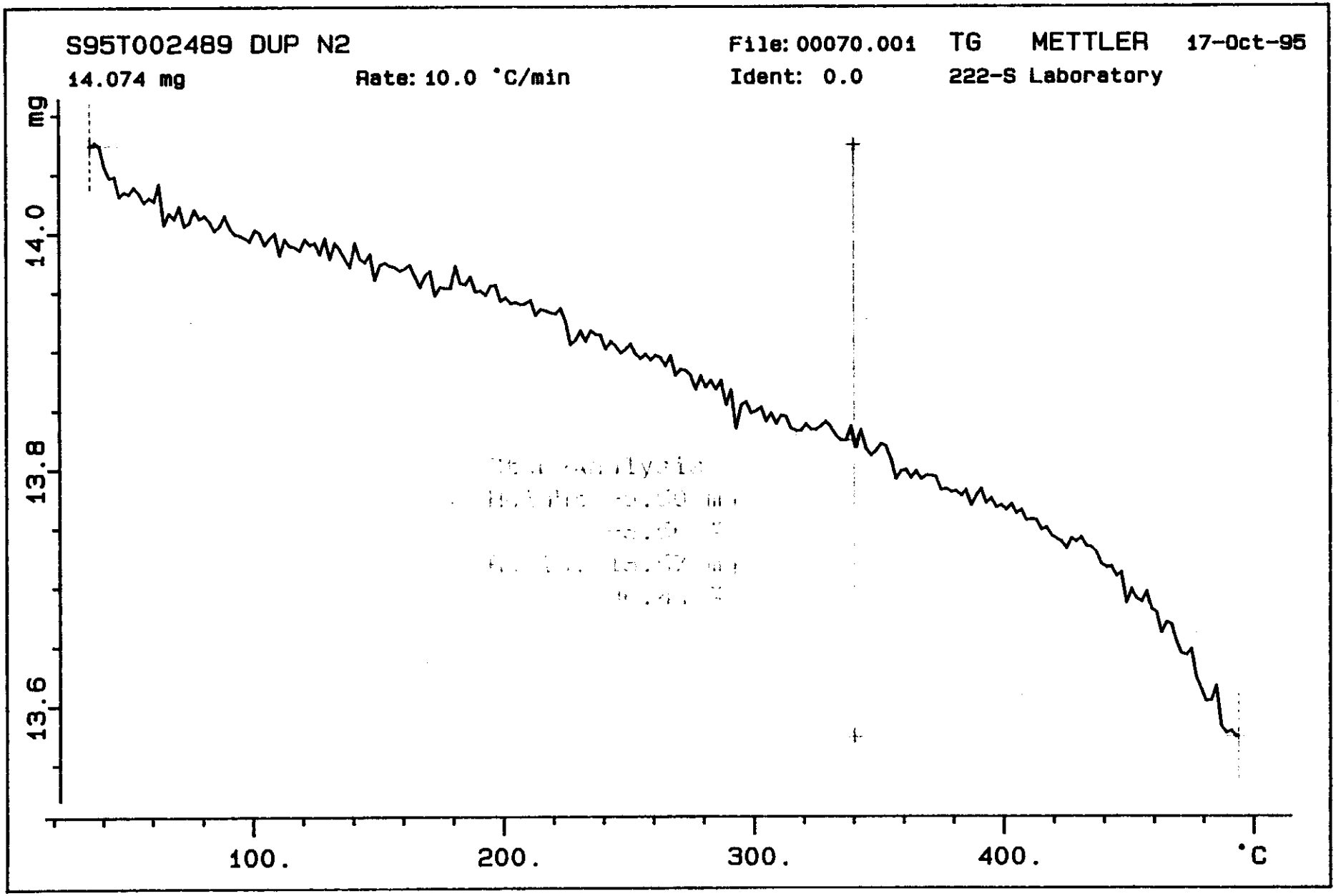




R Dawson 10/17/95

BEST AVAILABLE COPY





LABCORE Data Entry Template for Worklist# 2619

Perkin Elmer

Analyst: SMF **Instrument:** TGA0 3 **Book #** 65N8A

Method: LA-514-114 Rev/Mod C-0

Worklist Comment: Please run SX-108 TGAs under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-03	SOLID	59.74	60.30	N/A	%
95000136	SX-108	2 SAMPLE	S95T002567	0		TGA-03	SOLID	N/A	.591		%
95000136	SX-108	3 DUP	S95T002567	0		TGA-03	SOLID	.591	1.62	N/A	%
95000136	SX-108	4 SAMPLE	S95T002577	0		TGA-03	SOLID	N/A	.535		%
95000136	SX-108	5 DUP	S95T002577	0		TGA-03	SOLID	.535	.897	N/A	%

Final page for worklist # 2619

See attached for signatures

Analyst Signature **Date** 10-31-95

Verified by Blandina Valenzuela 11/8/95

Analyst Signature **Date**

AU6-043

Data Entry Comments: S95T002567 produced two weight loss steps of 2.36 wt % and 4.65 Wt %. S95T002577 produced two weight loss steps of 1.69 Wt % and 3.42 Wt %.

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 2619

Analyst: SMF SMF 10-23-95 **Instrument:** TGA0 _____ **Book #** GSN8

Method: ~~LA-560-112 Rev/~~Mod LA-514-114-C-0

Worklist Comment: Please run SX-108 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID			N/A	%
95000136	SX-108	2	SAMPLE	S95T002567	0		TGA-01	SOLID	N/A			%
95000136	SX-108	3	DUP	S95T002567	0		TGA-01	SOLID			N/A	%
95000136	SX-108	4	SAMPLE	S95T002577	0		TGA-01	SOLID	N/A			%
95000136	SX-108	5	DUP	S95T002577	0		TGA-01	SOLID			N/A	%

Final page for worklist # 2619

Susie M. Fulton 10-23-95 2330
Analyst Signature **Date**

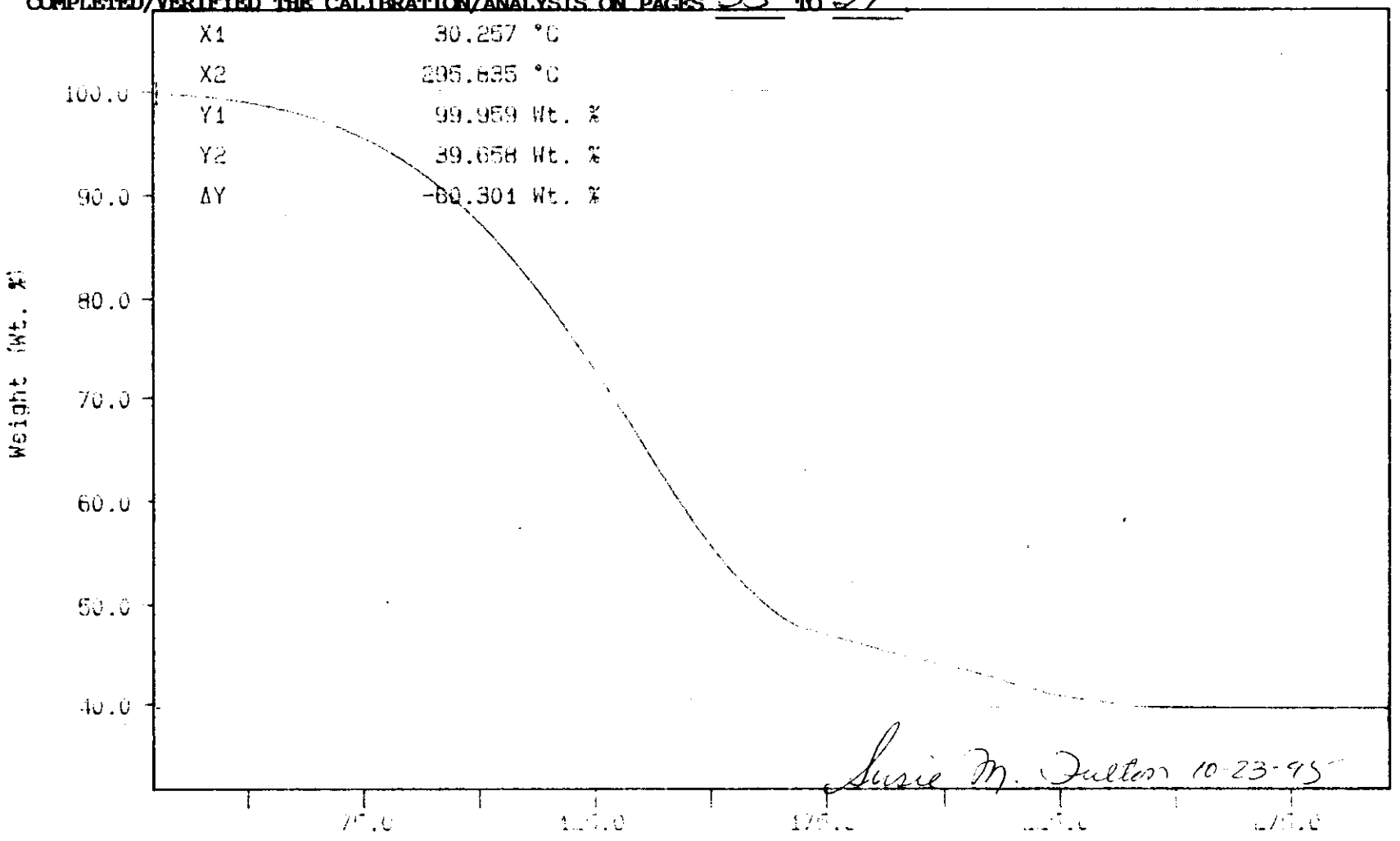
Analyst Signature **Date**

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

Curve 1: TGA
File info: TER102303 Mon Oct 23 16:14:13 1995
Sample Weight: 17.159 mg
66NB-A Terlig

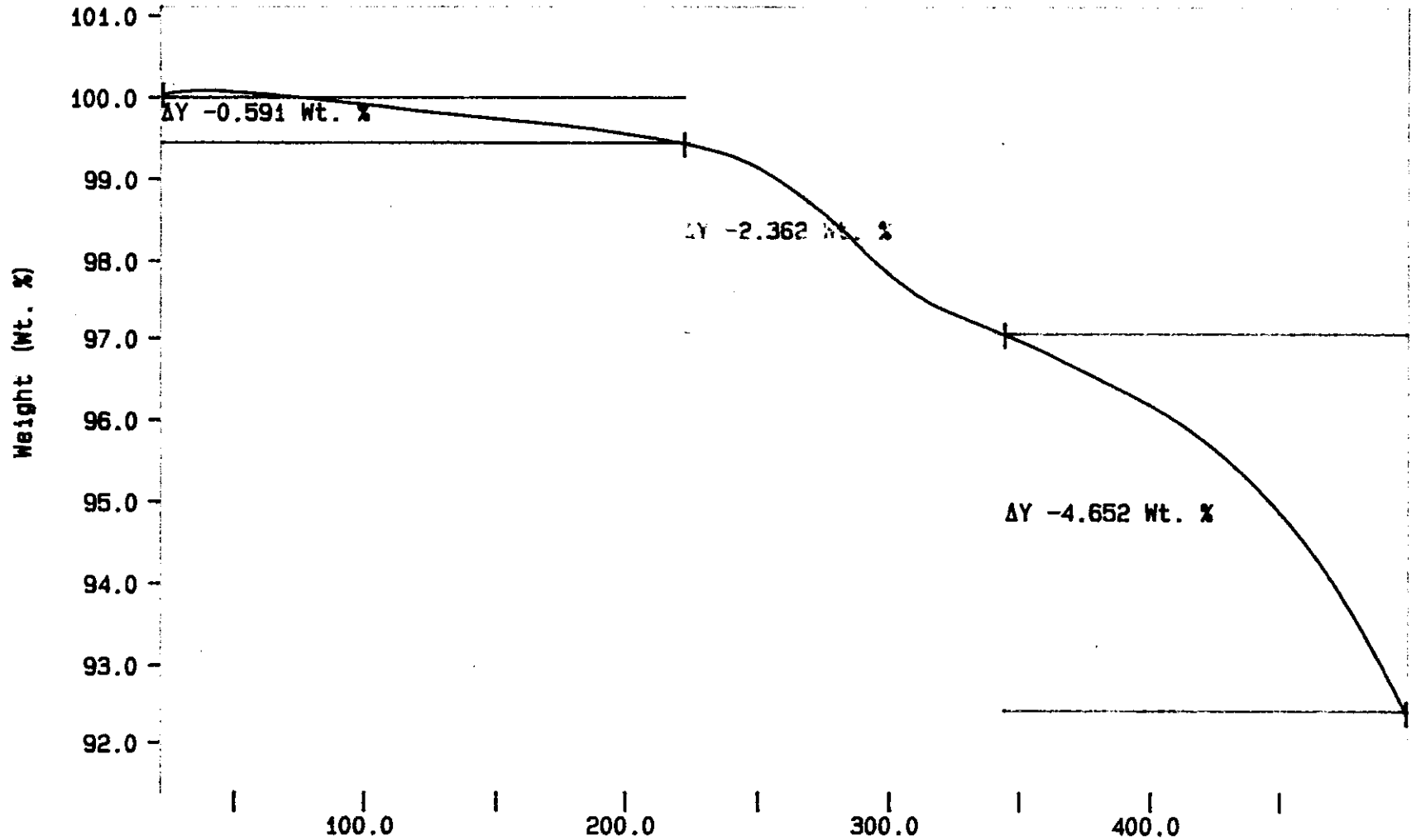
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 33 TO 37.



N2 10C/MIN

Mon Oct 23 17:44:17 1995

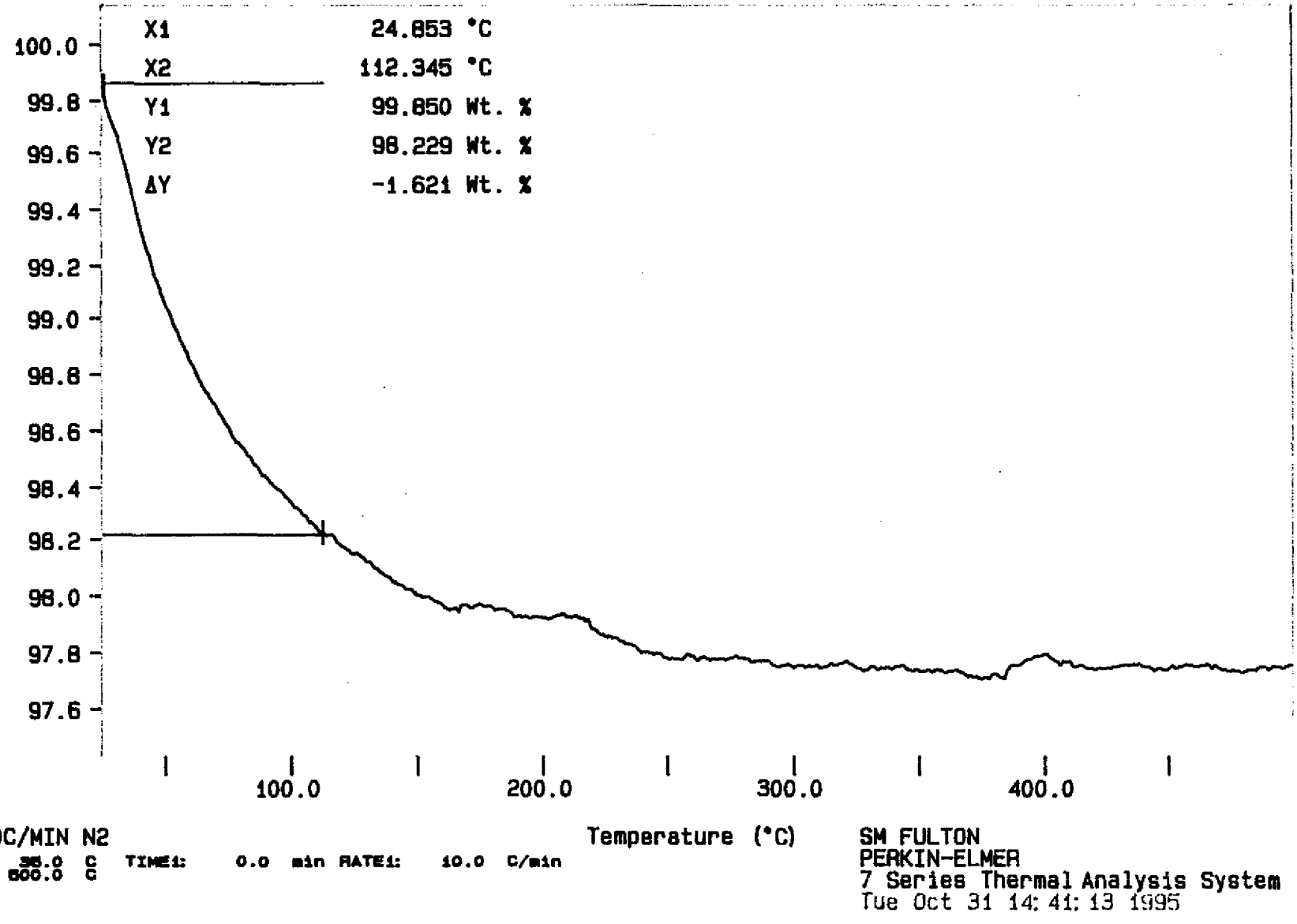
Curve 1: TGA
File info: SAM102310 Mon Oct 23 18:46:10 1995
Sample Weight: 15.862 mg
S95T002567



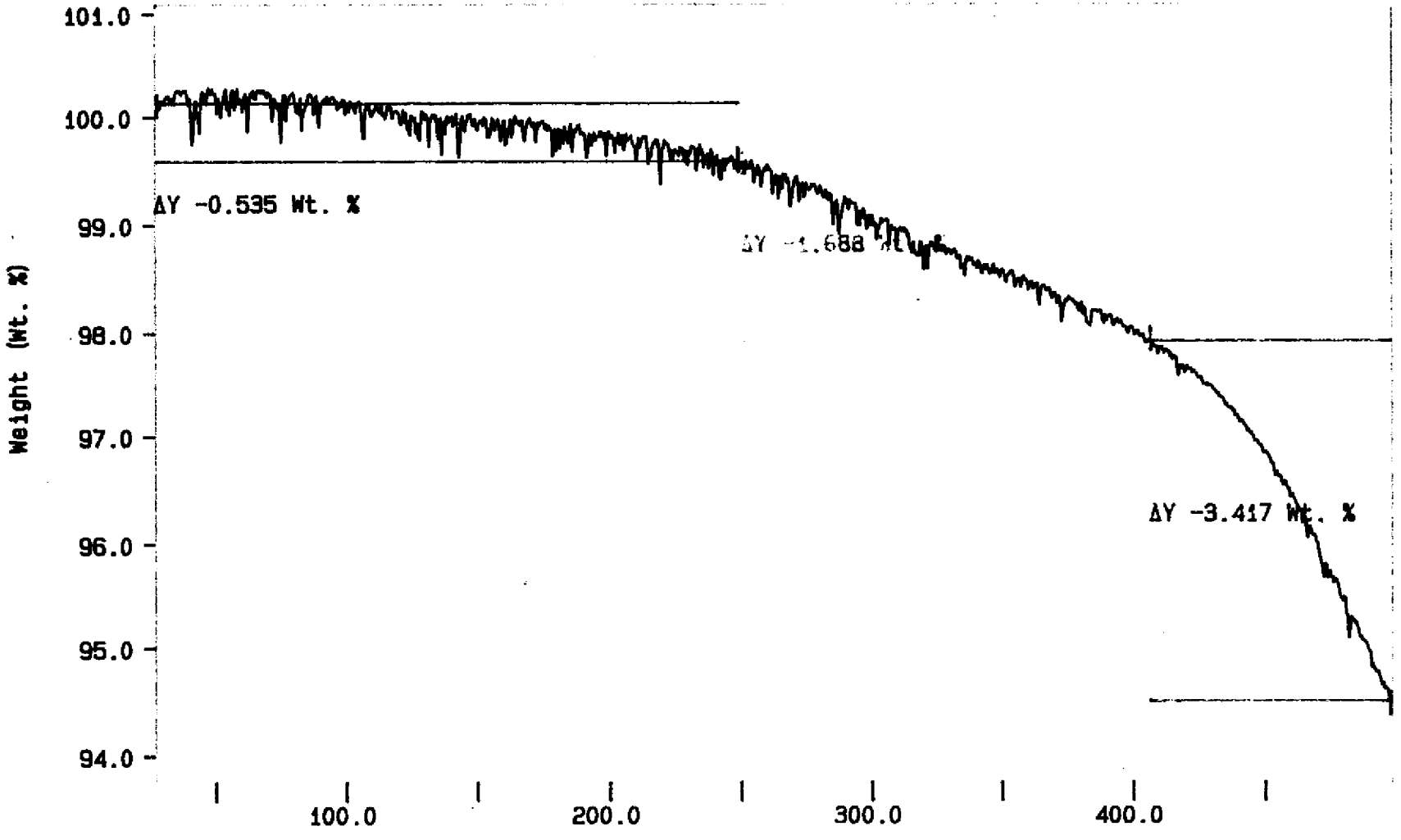
10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Oct 31 14:35:15 1995

Curve 1: TGA
File info: SAM102311 Mon Oct 23 19:56:09 1995
Sample Weight: 16.353 mg
S95T002567 DUP



Curve 1: TGA
File info: SAM102312 Mon Oct 23 21:27:18 1995
Sample Weight: 9.547 mg
S95T002577

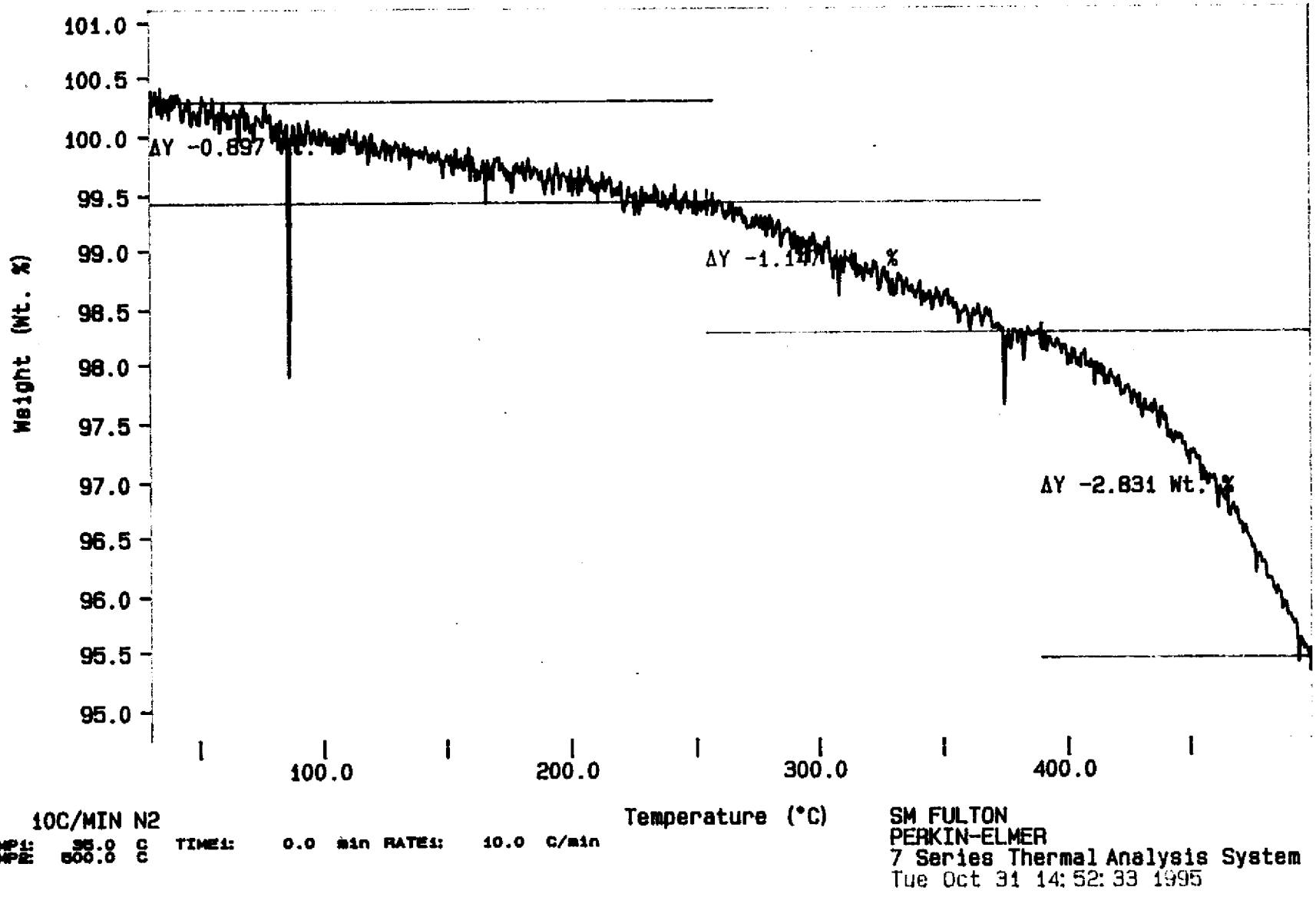


10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Oct 31 14:46:51 1995

WHC-SD-WM-DP-151, REV. 0

Curve 1: TGA
File info: SAM102313 Mon Oct 23 22:35:57 1995
Sample Weight: 22.453 mg
S95T002577 DUP



DISTRIBUTION SHEET

To Distribution	From Characterization Plans, Coordination and Reports	Page 1 of 2 Date: 11/09/95
Project Title/Work Order WHC-SD-WM-DP-151, Rev. 0, "45-Day Safety Screening Results for Tank 241-SX-108, Auger Samples 95-AUG-042, 95-AUG-043 and 95-AUG-044"		EDT NO.: EDT-613465 ECN NO.: N/A

Name	MSIN	Text With all Attach	EDT/ECN ONLY
Pacific Northwest Laboratory			
J. R. Gormsen	K7-28		X
S. J. Harris	K7-22	X	
K. L. Silvers	P7-27		X
U.S. Department of Energy, RL			
C. A. Babel	S7-54	X	
Westinghouse Hanford Company			
J. N. Appel	G3-21		X
H. Babad	S7-30	X	
R. J. Cash	S7-15	X	
R. F. Eggers	R2-12	X	
G. D. Forehand	S7-31		X
C. E. Golberg	H5-49		X
V. W. Hall	T6-03	X	
D. C. Hetzer	S6-31		X
L. Jensen	T6-07	X	
G. D. Johnson	S7-15	X	
N. W. Kirch	R2-11	X	
M. J. Kupfer	H5-49	X	
E. J. Lipke	S7-14	X	
N. G. McDuffie	S7-15	X	
J. E. Meacham	S7-15	X	
P. M. Morant	H4-25	X	
K. L. Powell	T6-06		X
L. W. Shelton	H5-49	X	
B. C. Simpson	R2-12		X
D. A. Turner	S7-15	X	
J. A. Voogd	H5-03		X
Central Files	A3-88	2	
EDMC	H6-08	X	
LTIC	T6-03		X
TCRC	R2-12	X	
TFIC (Tank Farm Information Center)	R1-20		X

DISTRIBUTION SHEET

To Distribution	From Characterization Plans, Coordination and Reports	Page 2 of 2 Date: 11/09/95
Project Title/Work Order WHC-SD-WM-DP-151, Rev. 0, "45-Day Safety Screening Results for Tank 241-SX-108, Auger Samples 95-AUG-042, 95-AUG-043 and 95-AUG-044"		EDT NO.: EDT-613465 ECN NO.: N/A

Name	MSIN	Text With all Attach	EDT/ECN ONLY
Washington State Department of Ecology Single-Shell Tank Unit Manager A. B. Stone	B5-18	X	
Environmental Protection Agency Single-Shell Tank Unit Manager D. R. Einan	B5-01	X	
U. S. Department of Energy Jim Poppiti 12800 Middlebrook Rd. Trevion II, EM-36 Germantown, MD 20874			X
Los Alamos Technical Associates A. T. DiCenso 309 Bradley Blvd. Richland, WA 99352		X	